



Docket No.: M4065.0697/P697-A  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
John T. Moore, et al.

Examiner: Jennifer M. Dolan

Application No.: 10/774,515

Allowed: June 6, 2005

Filed: February 10, 2004

Art Unit: 2813

For: METHODS OF FORMING A  
SEMICONDUCTOR MEMORY  
DEVICE

COMMENTS ON EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

Commissioner for Patents  
MS: Issue Fee  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Applicants agree only in part with the Examiner's statement for allowance. The Examiner's statement does not reflect all of the language of each of the allowed claims. The totality of the language of each claim provides additional reasons for the allowance of each claim.

Moreover, the Examiner's reasons for allowance are *not* commensurate in scope with all of the allowed claims. For example, the Examiner indicates that the primary reason for allowance is that the prior art fails to teach, *inter alia*, "disposing a chalcogenide material over a metal layer, diffusing a portion of the metal layer into the chalcogenide material, and then removing the portion of the chalcogenide that does not contain metal ions diffused therein. The prior art of record provides no suggestion of a

localized doping of the chalcogenide or that any portion of the chalcogenide would remain undoped.” These claim limitations, however, are not present in any of the allowed claims.

For example, claim 51 recites a method comprising, *inter alia*, “forming a metal over a substrate . . . patterning said metal into a structure having an outer surface. blanket depositing a chalcogenide material . . . on said metal structure outer surface; diffusing a portion of said patterned metal outwardly into a portion of said chalcogenide material; and etching a portion of said chalcogenide material into which said patterned metal has not been diffused.”

Claim 64 recites a method comprising, *inter alia*, “forming a patterned metal structure having an outer surface . . . blanket depositing a chalcogenide material on said patterned metal structure outer surface; diffusing a portion of said patterned metal outwardly into a portion of said chalcogenide material; and etching a portion of said chalcogenide material into which said patterned metal has not been diffused.”

Claim 71 recites a method comprising, *inter alia*, “forming a first electrode . . . forming a metal layer over said first electrode; forming a layer comprising a chalcogenide material . . . irradiating said metal layer to diffuse at least a portion of metal ions from said metal layer into portions of said chalcogenide layer, wherein said chalcogenide layer comprises a first region with metal ions diffused therein and a second region without a substantial amount of metal ions diffused therein; removing said second region of said chalcogenide layer . . . and forming a second electrode over at least a portion of said remaining first region of said chalcogenide layer.”

Claim 72 recites a method comprising, *inter alia*, "forming a first metal layer . . . forming a second metal layer . . . forming a chalcogenide layer . . . diffusing a portion of said second metal layer into a portion of said chalcogenide material to form a first and second region, wherein said first region comprises metal ions from said second metal layer; and removing said second region from said chalcogenide material."

Dated: September 1, 2005

Respectfully submitted,

By 

Thomas J. D'Amico

Registration No.: 28,371

DICKSTEIN SHAPIRO MORIN &

OSHINSKY LLP

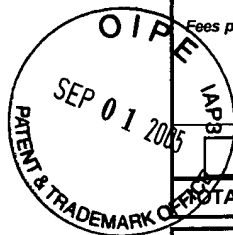
2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorney for Applicants

Under the Paperwork Reduction Act of 1995, no person are required to respond to a collection of information unless it displays a valid OMB control number.



Effective on 12/08/2004. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818). <b>FEE TRANSMITTAL</b> <b>For FY 2005</b>		<b>Complete if Known</b>	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Application Number	10/774,515-Conf. #8694
<b>TOTAL AMOUNT OF PAYMENT</b> (\$) 1,715.00		Filing Date	February 10, 2004
		First Named Inventor	John T. Moore
		Examiner Name	J. M. Dolan
		Art Unit	2813
		Attorney Docket No.	M4065.0697/P697-A

**METHOD OF PAYMENT** (check all that apply)

☐ Check    ☒ Credit Card    ☐ Money Order    ☐ None    ☐ Other (please identify): \_\_\_\_\_

☒ Deposit Account    Deposit Account Number: 04-1073    Deposit Account Name: Dickstein Shapiro Morin & Oshinsky LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below    ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17    ☒ Credit any overpayments

**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

**2. EXCESS CLAIM FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
20	- 20 =	x	=			
Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)			
2	- 3 =	x	=			

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
	- 100 =	/50	(round up to a whole number) x	=

**4. OTHER FEE(S)**

	Fees Paid (\$)
Non-English Specification, \$130 fee (no small entity discount)	
Other (e.g., late filing surcharge): 1501 Utility issue fee	1,400.00
1504 Publication fee for early, voluntary, or normal ...	300.00
8094 Printed copy of patent w/o color	15.00

<b>SUBMITTED BY</b>			
Signature		Registration No. (Attorney/Agent)	28,371
Name (Print/Type)	Thomas J. D'Amico	Telephone	(202) 828-2232
		Date	September 1, 2005